

WHAT IS CLAIMED IS:

1. An image display apparatus, comprising:
an emissive display having plural pixels;
at least one source of ultraviolet (UV) light; and
5 a pixel activation mechanism scanning the UV light onto the pixels
in response to a demanded image.
2. The apparatus of Claim 1, wherein the display is a large screen
display.
3. The apparatus of Claim 1, wherein the display is a phosphor display.
- 10 4. The apparatus of Claim 3, wherein the phosphor display operates at
atmospheric pressure.
5. The apparatus of Claim 1, wherein the display is a liquid crystal
display.
6. The apparatus of Claim 1, wherein the pixel activation mechanism
15 includes at least one grating light valve (GLV) controllable by a processor to
establish a demanded image.

7. The apparatus of Claim 6, comprising plural GLVs controllable by a processor to establish the demanded image.

8. The apparatus of Claim 7, comprising at least one beamsplitter receiving UV light from the source and directing respective UV beams to the
5 GLVs.

9. The apparatus of Claim 7, comprising plural scanning mirrors, each mirror being associated with a respective GLV, each mirror being oscillated about a respective axis.

10. The apparatus of Claim 9, comprising three and only three GLVs, a
10 first GLV being controlled to direct UV light onto only blue subpixels of the display, a second GLV being controlled to direct UV light onto only red subpixels of the display, and a third GLV being controlled to direct UV light onto only green subpixels of the display.

11. The apparatus of Claim 7, further comprising at least one mask
15 having plural excitation light apertures defining respective pitches, the mask being interposed between the GLVs and the display, the pitches between the excitation light apertures being established based on the locations of the respective excitation light apertures relative to the display.

12. The apparatus of Claim 1, wherein the source is a laser.

13. The apparatus of Claim 1, wherein the display includes at least one substrate, plural pixels being established on the substrate, each pixel being established by respective red, green, and blue subpixels, at least one light
5 refracting layer covering the pixels and opposed to the substrate.

14. The apparatus of Claim 13, wherein the pixel activation mechanism directs first, second, and third UV beams against the refracting layer at respective first, second, and third angles, whereby the first, second, and third beams are refracted by the refracting layer only onto respective red, green, and blue
10 subpixels.

15. The apparatus of Claim 14, further comprising a color selection mask layer juxtaposed with the refracting layer for shielding the blue and green subpixels from the first beam, shielding the red and green subpixels from the second beam, and shielding the red and blue subpixels from the third beam.

15 16. A method for producing a demanded image, comprising:
receiving the demanded image; and
directing light onto a display using plural light valves, the light valves being controlled in accordance with the demanded image.

17. The method of Claim 16, wherein the light valves are grating light valves (GLVs), and the light is UV light.

18. The method of Claim 17, wherein the act of directing includes modulating the UV light using the GLVs in accordance with the demanded image.

5 19. The method of Claim 18, further comprising interposing oscillating scanning mirrors between the GLVs and the display.

20. The method of Claim 18, wherein the display is a large screen display.

21. The method of Claim 20, wherein the display is a phosphor display.

10 22. The method of Claim 21, comprising operating the phosphor display at atmospheric pressure.

23. The method of Claim 20, wherein the display is a liquid crystal display.

24. The method of Claim 18, comprising:
15 generating a single UV light beam using a laser; and

splitting the single UV light beam into three light beams impinging
on respective GLVs.

25. The method of Claim 24, comprising:

directing a first light beam only onto red subpixels in the display;

5 directing a second light beam only onto green subpixels in the
display; and

directing a third light beam only onto blue subpixels in the display.

26. The method of Claim 7, further comprising interposing between the
GLVs and the display at least one mask having plural excitation light apertures
10 defining respective pitches, the pitches between the excitation light apertures
being established based on the locations of the respective excitation light
apertures relative to the display.

27. A video display apparatus for presenting a demanded image,
comprising:

15 a phosphor display operating at atmospheric pressure;

at least one UV laser beam source;

at least first, second, and third grating light valves (GLVs) directing
respective first, second, and third beams from the laser beam source onto
the display to activate respective red, blue, and green subpixels of the
20 display; and

at least one processor operably controlling the GLVs in accordance with the demanded image.

28. The apparatus of Claim 27, wherein the display is a large screen display.

5 29. The apparatus of Claim 28, wherein the display has at least one operational dimension of at least forty inches (40").

30. The apparatus of Claim 28, wherein the display has at least one operational dimension of at least fifty inches (50").

10 31. The apparatus of Claim 28, wherein the display has at least one operational dimension of at least sixty inches (60").

32. The apparatus of Claim 27, comprising at least one beamsplitter receiving UV light from the source and directing respective UV beams to the GLVs.

15 33. The apparatus of Claim 27, comprising plural scanning mirrors, each mirror being associated with a respective GLV, each mirror being oscillated about a respective axis.

34. The apparatus of Claim 27, further comprising at least one mask having plural excitation light apertures defining respective pitches, the mask being interposed between the GLVs and the display, the pitches between the excitation light apertures being established based on the locations of the respective
5 excitation light apertures relative to the display.

35. The apparatus of Claim 27, wherein the display includes at least one substrate, plural pixels being established on the substrate, each pixel being established by respective red, green, and blue subpixels, at least one light refracting layer covering the pixels and opposed to the substrate.

10 36. The apparatus of Claim 35, wherein the first, second, and third beams impinge against the refracting layer at respective first, second, and third angles, whereby the first, second, and third beams are refracted by the refracting layer only onto respective red, green, and blue subpixels.

37. The apparatus of Claim 36, further comprising a color selection mask
15 layer juxtaposed with the refracting layer for shielding the blue and green subpixels from the first beam, shielding the red and green subpixels from the second beam, and shielding the red and blue subpixels from the third beam.

38. An image display apparatus, comprising:
display means having plural pixels;

at least one source of ultraviolet (UV) light; and

pixel activation means scanning the UV light onto the pixels in response to a demanded image.